

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[PRICE 6D.]

Foreigner's Office, Washington, Baltimore, May, 1941.
R.R. - Correspondent in Baltimore, by airplane, from Maryland, Chicago, Iowa, New York, and Connecticut - direct, and, by ground route, from Ontario, Vermont, New Hampshire, the Old States Road, and London Bridge, to the Transit Road and Weymouth. Boston, with police cooperation in the north, we will at the Transit Road and Weymouth.

same proportion that the wheels are increased, or, otherwise, that sufficient power be applied on proportionably true slopes there something to the greatest practice"—that is to say, that the power of the engine is employed in overcoming the friction of the load, and in raising it up the inclined plane, and what is gained by increasing the breadth of the railway

It is a variable amount composed of the metal in question and a soluble salt, and the whole is in an electrolytic fluid, like water, containing hydrogen.—*Exquisite des Mineraux.*

On the morning of March 10, 1910, the deed was executed at Chicago in the name of the Chicago Police. The deed was presented to the Chicago Police on the morning of March 10, 1910, and the deed was presented to the Chicago Police on the morning of March 10, 1910, and the deed was presented to the Chicago Police on the morning of March 10, 1910.

PROCEEDINGS OF PUBLIC COMPANIES.

BRITISH IRON COMPANY.

The half-yearly general meeting of the proprietors of the above company was held at the London Tavern, Bishopsgate-street, on Friday, the 13th inst. J. HOBLEY PALMER, Esq., in the chair.

The circular convening the present meeting, and the minutes of the last having been read, the CHAIRMAN apologized for the absence of Sir G. Larpent, who had unfortunately been confined to his house by lameness for the last two months. The directors' report was then read, as follows:—

REPORT.

The present is an annual general meeting of the proprietors, held in pursuance of the deed and regulations of the company. At this meeting two directors—viz., Mr. Crawford and Mr. Ravenshaw—will go out of office, and, having given the requisite notice of their intention to become candidates for the office of director, and in other respects having done so, a resolution will be proposed that they be again elected. It will also be necessary for the meeting to elect an auditor, in the room of Mr. C. Bayley, deceased. The directors now lay upon the table the account of the receipts and payments of the company for the half-year ending on the 30th June and 31st December last, and the balance accounts of these dates. The directors regret to say, that the serious depression in the state of the iron trade, which existed at the time of the last meeting, has not only continued, but has even greatly increased since that period. So severely has it been felt by the ironmasters generally throughout the kingdom, that with a view to its mitigation, an arrangement was entered into by them all for a reduction of the make of iron to the extent of 25 per cent, notwithstanding which, however, very low prices, and an almost entire want of demand, still continue. This state of things has, of course, had a most injurious effect upon the half-year's operations of the company; but the directors are no reason to alter the opinion which they formerly expressed, that, under an ordinary state of trade, the works in Staffordshire and at Aberystwyth possess the capability of affording profit equal to any works similarly situated. In the mean time, by the reduction of wages and other measures, every exertion has been, and continues to be made, to render the loss as small as possible.

The loss upon the half-year's trade account (exclusive of Ruabon, where the workings are being brought to a close) is £4411. 18. 5d.; and upon the whole year, on the same principle, £2551. 14. 10d.

The directors have done everything in their power to bring some of the actions, against proprietors who have not paid the calls, to trial, but they have not yet succeeded in that object, in consequence of the great delay which has taken place in the courts respecting the pleas proffered by the defendants.

The CHAIRMAN stated he was placed in a most painful position; he had endeavored, by every means in his power, to contribute to the interests, and to settle the difficulties, of the company, which as yet he had not been able to effect. With regard to the proceedings of the company up to the present time, there could be but little doubt, that the reversal by the House of Lords, of the judgment which had been given in their favour, was the sole cause of the bickerings and disputes that had arisen, and the enormous liabilities with which the company was now saddled. When that decision was reversed, it was decided that the directors should call for 25s. per share, to liquidate the principal part of the liabilities of the company, leaving an amount of £250,000, outstanding, and which additional capital would, if the calls made had been met honourably by the dissentients, been ample for that purpose, besides putting the company in a situation to wind up the concern; and it was impossible that the company could be in that much-wished-for situation until the liabilities were greatly reduced. Resources might have been had in the money market, but the litigation at present proceeding had greatly impeded that course, by injuring the credit of the company. It had been blithely impossible to wind up the company, for, in 1835, Mr. Attwood still continued his litigation, and no one would buy a concern with such a blot connected with it, and, when it was settled in 1840, trade had become bad, and at present was worse. It was not only the iron trade, but every branch of productive industry that had suffered from the late depressed state of commerce. In Staffordshire the furnaces were blown out in all directions, and the reduction in wages was quite appalling, for they were at present working up the mineral from the mines at 8s. per week, from which circumstance some idea could be formed of the state of the trade. However, the liabilities must be met—it was the interest of all concerned to get rid of them, and, with that view, within the last week or two, a meeting of the most influential of the shareholders was held, who, he believed, had some plan under consideration to put a close to the liabilities, by finding some method of liquidating the demands against the company, and a plan of that kind would, if feasible, have the support of the directors. It was as much the directors' wish, as that of any of the proprietors, to bring the company to a close, but, in the present state of the company, and of trade, it was impossible; it must still be carried on for a while, and the remainder of the 25s. per share be paid up, when, in the course of a year, he trusted some plan would be brought forward, by which all the difficulties of the company would be got rid of, and the concern brought to a close, to the credit and interest of all.

The promissory notes of the company, amounting to £200,000, which were issued in May, 1841, for the purpose of enabling the arrangement with Mr. Attwood to be carried into effect, had, in the present month, been renewed for twelve months longer, at 5 per cent. interest, instead of the 6 per cent. previously paid.

Mr. W. Crawford and Mr. Herd Ravenshaw were then re-elected directors, and Mr. J. Simon Smith was elected an auditor in the room of Mr. C. Bayley, deceased.

Mr. BROWNING stated that he had been requested by his partner, Sir G. Larpent, in consequence of his illness, to attend a meeting of some of the principal proprietors, and had taken pains to make himself acquainted with all the facts, and had come to the conclusion that the most energetic measures must be adopted to get rid of the liabilities of the company. Several plans had been suggested, but none was in a sufficiently advanced state to be brought before the meeting, but something must be done to remove the grievous disputes between themselves, and the only course to be pursued would be to meet their engagements fully, and, having placed the company in a position where its credit would stand good, to await the revival of trade to effect the sale of the works, if such a course should be thought advisable, but which, at the present time, was utterly impracticable. He hoped some plan would be found, and one that the directors could bring forward. The proprietors at present seemed to be divided into three classes; one class was fully sensible of the responsibility, and was ready and able to meet it; another class had paid the calls, but was unable to make further contributions; and the third class refused to pay any of the calls, which he declared were illegal. He should wish as the first step towards a settlement that all should be unanimous, and submitted to the proprietors that the directors should be called upon to communicate with the leading proprietors, and arrange some plan by which their troubles, occasioned by the state of trade and non-payment of calls, might be removed, and by which those who wished to get rid of their liabilities might do so by abandoning their interest. He was quite aware of his responsibility as a partner in the company, and would not shrink from it even if it were in his power, and he trusted that the other shareholders would have the same feeling, and meet the question with the candour and courtesy which characterize the British Merchant.

The CHAIRMAN said, he gave Major Richardson the credit of having proposed a plan, in the first instance, by the creation of new shares; but their solicitor had decided that that plan was contrary to the Deed of Settlement, and would require an Act of Parliament to carry it out. For his own part, he wished he could at that moment send every man out of that room free from liability—which must be met; and, thus, the more their bickerings added to the difficulties of the company, the more did their difficulties increase in meeting them. He trusted, therefore, that whatever plan the leading proprietors should fix upon, all would be agreed upon it.

Some conversation then ensued upon the plan submitted by Major Richardson, at the termination of which, Mr. BROWNING moved, and Mr. HERON seconded, the following resolution:—

That it is expedient to take prompt and effectual measures for liquidating the remaining liabilities of the company, and, therefore, that the directors be, and they are hereby requested, to consult with the principal shareholders as to the best plan for accomplishing that object, and to report their opinion to a general meeting, to be called specially, for the purpose of receiving such report.

Major RICHARDSON then said, he had no objection to the motion of the hon. gentleman, and approved of the sentiments he had expressed, except in one or two instances; he objected to the way in which those shareholders who, on legal grounds, refused to pay calls, which he thought illegal, were mentioned; he could not see that they were bound in honor to pay what was not due, or to go on because others did, leaving thousands every year. The "united shareholders" had refused to pay the calls, under the opinion of the best counsel they could get. The gallant Major then adverted to the losses the company had sustained, and produced a bill which had been prepared for Sir G. Larpent, in stating that, in a court of equity, every shareholder was sure to have justice done to him. The losses (estimated Major R.) had been enormous, amounting to about £1,500,000, all of which was gone except about £3,000,000, which had been paid as dividends out of the capital of the company, and contrary to the Deed of Settlement. The property could have been, according to the valuation, sold for at least £10,000,000, beyond the liabilities, when the question of the dissolution of the company was mooted.

Mr. BROWNING stated it was useless talking about the past transactions, which, if entered into, could not be productive of good; the company was in a certain position now, and the practical point was, how to get out of its difficulties.

The CHAIRMAN stated, it would certainly have been better for all if the company had never been formed, and the conduct of the original directors, in signing such contracts, was absurd; but the thing was, that in 1835 the whole town was mad, and the iron mines were looked upon as gold; and was then at about 14s. to 17s. per ton, at which price it was expected to keep with respect to the liquidation of their property, they made a profit of £1,000,000, and in 1841, a loss of £1,000,000, the price of iron, in that year, falling from 15s. to 12s. The directors could not be blamed for those losses, they were the effect of circumstances. Whatever was done should be with a view

of bringing the company to a close, and his best endeavours should be exerted to gain that end.

Mr. M'LAREN inquired if the action for calls would be abandoned, in consequence of the proposed plan? and was answered in the negative. Some conversation then ensued, during which it was stated that the liabilities amounted to about £30,000,000, from which was to be deducted the extra stock of iron, arising from the late want of demand. The meeting then adjourned.

WEST WHEAL JEWEL MINING ASSOCIATION.

The general meeting of the proprietors of this company was held at the offices of the company, 23, Threadneedle-street, on Monday, the 9th inst. J. HERBON, Esq., in the chair.

The advertisement convening the present meeting was read, and the minutes of the last confirmed, after which the SECRETARY read the report of the committee of management. The report of the agents of the mines was also read, for which see our "Mining Correspondence."

DIRECTORS' REPORT.

Having read the report of your committee of management in Cornwall, and that of the respective agents, giving an account of the condition and prospects of the mine, your directors have to bring under your notice the situation of the association, in a financial point of view. It will be shown by the balance-sheet upon the table that the sum in hand, together with the proceeds of the ensuing sale of ore (forming the funds now available), will be exhausted by the middle of July next; it is, therefore, evident that, without great and speedy improvement, the object of the company cannot be carried out—namely, working the mine judiciously and vigorously to a profitable result; your directors, therefore, having consulted with their colleagues, suggest that they should be empowered to make further calls upon the shareholders to an amount not exceeding 2s. per share, to be called in instalments not exceeding 10s. per share, and at such periods as may be deemed most expedient, being confident the period is not far distant when the mine will be in a position to meet her own expenses, which is the first step towards a profitable result. In consequence of this increase of capital having been anticipated, an application has been made to the lords, through their agent, which has been very favourably received, for a further reduction of the dues to 1-2-6th, which abatement is confidently anticipated will be accorded to by the lords. This concession is of such manifest importance, that it would be superfluous on the part of the directors and committee to enlarge upon it further. A cordial and earnest co-operation on the part of all concerned is the surest and best guarantee for obtaining what is firmly believed to be the inevitable result of our labours—namely, a lasting and valuable mine.

The CHAIRMAN stated that there was nothing very brilliant in their accounts, but it must be satisfactory to the proprietors to see that there was a gradual improvement. All that was required to carry out their wishes was a little more patience and a little more money. The mines were conducted in a skillful manner, and were in a good situation, which ought to be sufficient to inspire the proprietors with confidence, as well as the information that the last call of 1s. per share had been fully paid up.

Mr. HARVEY stated that the reports so fully explained the present position and future prospects of the company, that he could add but little to them. They were now getting into the ore ground under the seventy fathom level, and the lodes were generally much improving. He then, at some length, explained the progress that had been made in the several levels and shafts.

In respect to the additional capital of 2s. per share, the CHAIRMAN observed that one call of 10s. per share would be made immediately, and he hoped that amount was all that would be required for the present year; another 10s. would be called for in the beginning of next year.—Mr. E. TURNER, M.P. for Truro, considered the reports as very satisfactory and very important. One thing he had always looked upon as a good sign, which was the change of the ore from black to yellow, and which change had taken place in their mine. The readiness with which all the calls had been paid up reflected great credit upon the concern. He held 300 shares, and was ready to say up the future calls, as his confidence in the management was the more increased by the reports that had been read that day.—It was then moved by Mr. GARLAND, seconded by Mr. TURNER, and carried unanimously—"That the reports and statement of accounts be received and adopted."—Mr. TURNER then stated that he had read a letter from Mr. Baileig, of Cheltenham, who had lost twenty scrip shares, and for which lost shares the directors had agreed to give him new shares, on his giving them an indemnity, and paying the expense of the same; but he objected to the charges made by the company's solicitor, who now offered to take whatever sum his own solicitor should decide upon as proper. The calls were all paid upon the shares, but the scrip had been lost.—Mr. J. Heron was unanimously re-elected a director of the company.—Mr. GARLAND then moved, and Mr. TURNER seconded, a resolution, which was carried unanimously, voting the thanks of the meeting to the chairman, directors, and managers of the company, for their zeal and attention to the interests of the proprietors.—In reply to a proprietor, Mr. TURNER stated that he had not so much fear as to the effects of the new tariff with respect to the mines; he thought a protecting duty of 7s. 10s. per ton would be quite sufficient.—The meeting then adjourned.

LONDON AND CROYDON RAILWAY.

At a special meeting of the proprietors of the above company, held at the London Tavern, on Tuesday, the 10th inst., for the purpose of gaining the consent of the proprietors to the Bill now in Parliament for the formation of a road to the commencement of the Croydon Railway, near Corbett's lane, after some strong opposition from Mr. Levi, but in which he was almost unsupported, only five proprietors having voted for his amendment, "that the Bill be read at the next annual meeting," a resolution was carried, approving of the proceedings of the directors, and sanctioning the application in Parliament for the necessary powers.—The meeting, after a vote of thanks to the chairman, adjourned.

NATIONAL PROVINCIAL BANK OF ENGLAND.

At the annual general meeting of the proprietors of the above company, held on Thursday, the 12th inst., the directors' report showed that branches had been established at Dover and Shrewsbury, under very favourable circumstances. The assets available for a dividend amounted to £3,702,175. 6d., from which it was proposed to pay a dividend of 6 per cent. on the year 1841, which would leave a balance of undivided profits of £9,113, 1s. 6d.—Some conversation then ensued, during which the report was read and adopted, and ordered to be printed.—Four directors were appointed for the ensuing year, and the meeting adjourned.

NATIONAL LOAN FUND SOCIETY.

The annual general meeting of the above society was held at the London Tavern, on Wednesday, the 11th inst. T. LANE MURRAY, Esq., in the chair.

The advertisement calling the meeting having been read, the directors' report was submitted, which stated that the progress of the society, in the number of new policies, had not been so great during the past as in the preceding years, the severe and continued pressure experienced throughout every department of productive industry having diminished the means—and, consequently, the facilities—of obtaining the security of future provision afforded by life assurance. The number of policies issued by the society have augmented from 1230, in the year 1840, to 1775 at the close of 1841, and to 1890 at the present period. Another source of satisfaction is in the fact that the actual has been less than the expected mortality, the sums already paid, and for which claims are admitted, being £2,998, 19s., while the sum expected amounted to £9,000. The former amount is even augmented by the sum of £3000, caused by the accidental death of an otherwise healthy member. The arrangement for the conversion of the capital of the society into 200,000 shares had been effected, with the exception of 1000 shares, in the hands of proprietors whose residences are not accessible.

The CHAIRMAN, after a few preliminary observations, observed that they might take credit to themselves for having largely increased in the public mind a disposition to obtain security for the future, by means of Life Assurance; if they looked to facts, they would find that, since the institution of the National Loan Fund Society, little better than some four years ago, nearly forty offices had been established by a kind of impetus, the consequence of the publications of the National Loan Fund, and the pains taken by the Society to disseminate its principles. Any person acquainted with the calculations upon which the security of offices of this kind was founded, would say that on an office which had been able, within a period not longer than four years, to issue 1890 policies, had arrived at as high a point of security as could be desired of longer standing. All that was required in the calculations of life assurance was such a number of policies as would form an average, and this had been fully attained by the society.

Mr. MURRAY moved the adoption of the report, which being seconded, the CHAIRMAN wished, before putting the resolution, to observe that in the next year it would be their business to make a division of profits. The proprietors were aware that one-third of the profits would reach them, and, considering the large capital that was now guaranteed to the policyholders, one-third of the profits would not be considered extravagant.—The resolution was then carried unanimously, after which four directors and two auditors were unanimously re-elected to serve for the ensuing year.—In reply to a proprietor, the CHAIRMAN stated that the income of the society for the past year was £25,000.

ASSAM COMPANY.

At the annual meeting of the shareholders of the above company, held on the 6th inst., at the London Tavern, it was shown that the enterprise, though one of severity, was no longer of doubtful success, if conducted with prudence and economy; it appeared that 2124 "pounds" of lead in the north division of the company's grant were considered applicable to the cultivation, and, in the north division, 15,650 pounds. The total quantity, fully and partially, in cultivation was, in August last, 1975 pounds. The first shipment of tea, the produce of the first season of their operations in Assam—that of 1840, and received in December last—amounted to 10,312 lbs., and it fetched, on an average, 3s. per pound, being considerably better than any that had been produced before.—After some conversation, the report was adopted, and resolved to be printed, and the directors and auditors who had taken office by rotation were re-elected, and the meeting adjourned.

ON THE SILURIAN ROCKS AND OLD RED SANDSTONE OF THE SOUTH OF WESTMORELAND.

A memoir, by D. Sharpe, Esq., F.G.S., was read at a late meeting of the Geological Society of London, the object of which was to give an account of the Silurian rocks and old red sandstone of the south of Westmoreland, to define approximately their geographical boundaries, and to compare the formations with the equivalent deposits in other parts of the kingdom.

SILURIAN ROCKS.—After referring to the labours of Professor Sedgwick, Mr. J. Phillips, and Mr. J. G. Marshall, the author describes the Silurian deposits under the heads of—1. Conistone limestone. 2. Blue flagstone rocks. 3. Windermere rocks. 4. Ludlow rocks.

1. Conistone Limestone.—This formation, the lowest examined by the author, consists of strata of hard dark blue slate limestone, and of thin beds of dark brown shale, the former gradually diminishing in thickness as they ascend in the series, and disappearing towards the top of the deposit. Organic remains abound in some of the beds, and, from their agreement, in part, with species described in Mr. Murchison's work, the author places the Conistone limestone among the lower Silurian rocks, but without attempting to define its exact relative position.

2. Blue Flagstone Rock.—The shales of the preceding deposit pass upwards into dark blue flagstones, apparently destitute of organic remains. The beds agree in dip and strike with the strata of the Conistone limestone, and the faults which affect that formation extend into the flagstones.

3. The Windermere Rocks.—This great series is separated, by Mr. Sharpe, into three divisions; the lowest, which succeeds conformably to the flagstones, consists of grey schistose grits and argillaceous slates, with occasionally thin beds of limestone; the middle, of hard argillaceous and gritty rocks, and beds of soft shale, and the uppermost of hard purplish greywacke. No well defined organic remains were found in any part of the series by the author, but he alludes to the fossils discovered by Mr. Marshall in the lowest division, and described as belonging to lower Silurian species. Mr. Sharpe, nevertheless, declines placing the Windermere rocks on an exact parallel with any of the Silurian rocks of Mr. Murchison, but he points out their precise agreement with the lower members of the Donaghishire upper Silurian series, described by the late Mr. Bowman. A line drawn from Conistone Waterhead to Lisdale, a distance of twelve miles, would cross the whole of the strata at right angles to their strike; and though the same strata are considered by the author to be frequently repeated in parallel anticlinal ridges, yet the total thickness of the three divisions is estimated to exceed 8000 feet.

4. Ludlow Rocks.—This series of strata is stated by Mr. Sharpe to rest unconformably on the middle and upper divisions of the Windermere rocks, and to be composed of hard purplish grey argillaceous strata. It abounds with casts of shells, which mark the lines of stratification; and the thirty-four species enumerated in the paper are almost entirely assigned to testaceous, figured and described in Mr. Murchison's *Silurian System* as Ludlow fossils. The author, however, does not place the Westmoreland beds on an exact parallel with any portion of the triple division of the Ludlow rocks of the border counties. The uppermost strata are shown to pass gradually into the tile stone or bottom of the old red sandstone, which Mr. Sharpe considers ought to be removed from that formation to the Ludlow rocks, as seven of the fourteen species of shells which occur in the tile stones of Herefordshire having been found low in the Ludlow series of Westmoreland. As a further proof that this alteration ought to be made, Mr. Sharpe states, that where the old red sandstone rests on the Windermere rocks, the beds in question are wanting. The principal district occupied by this formation extends in a west and east direction from the neighbourhood of Kendal to the valley of the Lune, and in a north and south direction from Benson Knot nearly to Farleton Knot; and other patches of Ludlow rocks occur south-west and north-west of Kendal, and at the west base of Underbarrow Scar.

Old Red Sandstone.—This formation is stated to prevent, where best developed, the threefold division of loose conglomerates, red marls, and thin bedded red sandstone, the last constituting the lowest part of the series. It is shown to occupy several detached districts, the principal of which are in the valley of the Lune, from the neighbourhood of Sedburgh to Kirby Lonsdale, where it expands to the north-westward over an area of no great extent—the valleys of the Keat, Sprint, and Mint, and the vicinity of Shap and Tebay. Mr. Sharpe considers, as probably belonging to the old red sandstone, the bed of brown gravel which covers the whole of the valley of the Lune to its junction with the Ribblesdale.

GENERAL REMARKS.—In comparing the Westmoreland strata with their equivalents in other parts of the kingdom, the author states, that the triple division of the old red sandstone, noticed above, agrees remarkably with that of Herefordshire, the only difference being the disintegrated state of the conglomerates and the absence of the coniferous. The gradual passage from the old red sandstone into the Ludlow rocks is shown to coincide with the descriptions given by Mr. Murchison of the junction of the two formations in Herefordshire. The Ludlow rocks of Westmoreland are stated to resemble generally those of the border counties of England and Wales, but not to admit of a similar subdivision, owing to the absence of a representative of the Aymestry limestone, though they agree, as before observed, precisely with the Ludlow series of Donaghishire. With respect to the Windermere series, Mr. Sharpe makes no attempt, as already stated, to fix its precise geological position with reference to the divisions of Mr. Murchison, but he dwells upon the exact accordance in structure and succession of beds displayed by it and the lower portion of the upper Silurian strata of Donaghishire. The age assigned by Mr. Sharpe to the Conistone limestone has been given in a former part of this notice. The author then enters upon the inquiry respecting the principal epochs of disturbance of the Westmoreland strata, and he states at length his reasons for assigning the earliest period to the outburst of the Shap granite, which event, he conceives, took place subsequently to the deposition of the Windermere series; and, from the old red sandstone resting horizontally on the elevated rocks of Shap Fell, he infers that that formation was accumulated after the disturbance consequent on the elevation of the granite. Further, he shows that all the faults which affect the old red sandstone, or any newer formation, are more modern than the outburst of the granite. Having thus defined, geologically, the epoch of that event, Mr. Sharpe proceeds to point out its effects. He conceives that, in the south of Westmoreland, the protrusion of the granite threw the strata of the Conistone limestone and Windermere rocks into their highly inclined position, and produced the great east and west faults around Conistone and Windermere, as well as in the Middleton and Casterton Fells, likewise the dislocations of the Conistone limestone, with their prolongation, into the valleys of Conistone, Windermere, Kesteven, &c. The author observed no proof of the Ludlow rocks having been disturbed anterior to the deposition of the old red sandstone; but he says there is abundant evidence that both these formations were dislocated before the accumulation of the mountain limestone. Lastly, he alludes to some instances of the successive elevation of hills in one direction by forces acting at different periods.

BRITISH ASSOCIATION.—The twelfth annual meeting will be held this year at Manchester, the local committee of management having, with the consent of the London council, fixed the first day of meeting for Thursday, June 23. At the last meeting at Plymouth this town was selected, when Lord Francis Egerton, M.P., was elected president, and the venerable Dr. Dalton, F.R.S., the father of modern chemistry, and the Dean of Manchester, were chosen amongst the vice-presidents. Every preparation is being made to give the members a liberal reception, and the arrangements for the meetings and exhibitions are on a very large scale.

DESTRUCTION OF MALLEABLE IRON RAILS.—Time was when engineers generally were under the impression that rolled iron edge rails, of 30 lbs. to the yard, would last from fifty to sixty years, but experience is fast dissipating all such notions, by demonstrating that the duration of rails of malleable iron is not determined by mere superficial wear, but by the time which it requires for a given amount of trade rolling upon them, to disintegrate them internally—that is, to produce disruption and exfoliation of the laminae of which they are composed. Mr. Ellwood Morris, an American engineer, calculates (*Franklin Journal* for March) that 1,500,000 tons gross weight, conveyed over rolled iron edge rails of the T and H forms, weighing from 33 lbs. to 42 lbs. per yard, will destroy them in ten years. The rails of the Philadelphia and Columbia Railroad, which are of this description, have been in use only seven years, and are already exhibiting strong symptoms of coming destruction. Mr. Morris has the candour, at the same time, to mention that these results are in perfect accordance with what our countrymen, Mr. W. Chapman, of Newcastle (see *Wood on Railroads*), predicted, many years ago, as most likely to happen.

ORGANIC CHEMISTRY.—At a numerous meeting of the Pharmaceutical Society, held on Wednesday evening, Mr. Fownes delivered an important lecture on organic chemistry. After remarking on the importance of a knowledge of abstract science to the professions, and particularly to chemists and druggists, and on the difficulty, such which the society would have to accomplish, to raise them to the level of those of the continent, he described the objects contemplated in the investigations of organic chemistry. Until within almost the last few months, ultimate analysis has been a task of uncertainty and difficulty, but the discovery of the apparatus have been removed in the very ingenious contrivance of Professor Liebig, by means of which organic chemistry partakes of the same simplicity and accuracy as inorganic chemistry. This ingenious process was shown by the lecturer in the decomposing and ultimate analysis of sugar, and its several changes and stages were explained. The process for the analysis of volatile liquids, a subject rather more complicated, was the concluding notice of the lecturer.

WESTINGHOUSE.

SHEPPARD'S.		MAY 18 1892.	
Butter Mining Association	9, Warwick street	May 18	2
Provincial Bank of Ireland	4, Old Broad street	19	10
American Agricultural Company	18, King's Arms-yard	25	4
West Wb. Jewell, Master Co.	29, Threadneedle street	25	10
Ramsons Gas & Light Company	Office, Ramsons	27	7
St. John del Rio Mining Company	Tottenham yard	28	4
North Coal Iron and Coal Co.	64, Finsbury square	28	1
Trevelyan Mining Company	6, St. Mildred's court	30	2
Trust Bank	Goldsmith Coffee-house	31	1
Steel Vessel Mining Company	6, St. Mildred's court	31	2
Caledonian Mining Company	64, Finsbury square	31	2
Thames and Medway Canal	George and Willshire Tavern	June 1	1
Imperial Brazilian Mining Ass'n	Windmill house	4	12
Stockton and Hartington R'way	Station, Stockton	4	12
Bank of Australia	2, Newgate street	8	7
Grand Union Canal	9, Surrey street, Strand	6	11
Grand Junction Canal	Down and Anchor Tavern	7	12
Bank of British North America	1, St. Helen's place	7	12-1
Commercial Steam Packet Co.	London Tavern	July 1	12

GALLS.

London and Blackwall Railway 21... May 18... London and Westminster Bk.
 Cambrian Iron and Steel Co.. 24, August 7... London Joint-Stock Bank.
 DIVIDENDS
 General Woolman Mining Ass'n. 14, per share Winchester House May 18.

FOR MORE INFORMATION, CONTACT:

DATE	PLACE OF MEETING	DAY	TIME
1919	4, St. Martin's place	Monday	8 P.M.
Mathematical	16, Grosvenor street	Monday	8 P.M.
British Architects	10, Grosvenor, Fleet street	Monday	8 P.M.
Medical	71, Regent street	Tuesday	8 P.M.
Mathematical	Adelaide street	Tuesday	8 P.M.
London Electrical	47, Leicester square	Tuesday	8 P.M.
Chemical	Adelphi	Wednesday	8 P.M.
Society of Arts	5, Somerset House	Wednesday	8 P.M.
Geographical	Albemarle street	Friday	8 P.M.
Royal	20, Bedford street, Cav. G.	Friday	8 P.M.
Mathematical	Cripton street, Ruitalside	Saturday	8 P.M.

NOTICE TO CORRESPONDENTS.—The report of

James Watson, a "Subscriber," of Manchester, was published entire in our Journal presented in March. With regard to our correspondent's threat, of ceasing to be of 25th December last, we are glad to see that he has not done so. We are glad to see, "a subscriber," if we continue inserting fallacious respecting Mr. C. W. Williams, "a subscriber," if we can only say, that our object, so frequently expressed, is to expose the "fallacies" of all parties, satisfied that, in pursuing such course, we are commencing with the most scientific truths, on which may be founded an effective most likely to elicit those scientific truths, on which may be founded an effective prevention for the smoke nuisance, without reference from us and we are not now likely to be influenced by the letter of our correspondent. Our opinions are open to be influenced by the letter of our correspondent. Our opinions are open alike to "the friends" of "A subscriber," as to Mr. Williams, Mr. Armstrong, Mr. Head, or to any other writer who may forward us authenticated communications on the subject.

The Parliamentary returns of tin, copper, lead, and iron, together with other minerals, are as usually postponed.

We have much pleasure in acknowledging the complimentary letter of the 23rd inst. in relation to the use of the plant referred to it, as yet, incomplete, from one of those very many employers to which the conduct of the press has, we regret to say, too frequently subjected. We shall endeavor, not only to supply the request, but also to aid the learned Doctor in his quest for information through our columns, but cannot but be looked forward to with forthcoming Report on Ventilation, which cannot but be looked forward to with much anxiety, as treating on a subject of paramount importance, and by a gentleman from whom whose cooperation is justly entitled, if not immediate adoption.

New Times—The letter from Poway which should have come to hand yesterday, we did not receive until this morning, it having been misdirected. It shall have attention in our next, and, as the tariff stands over, the observations may be then resumed.

"C. B."—Apply to Messrs. Collinson and Flint, sharubenders, Hull.
 "Kissed"—Argus—"St. Leonard's"—"A Shareholder in Alsterman Thos. Wood's
 Tobacco Company"—"Mr. John Dodge"—"A Miner"—"Camborne"—"A Lancashire
 Colliery Agent"—"Black Jack"—"P."—(Llanelli)—"C. A."—(Kegworth
 Leicestershire).

THE MINING JOURNAL,
mining and commercial gazette.

LONDON, MAY 14, 1842.

The new Tariff has been submitted to the House of Commons by Sir ROBERT PEEL, and we lament to say, not only is it destructive of the British Mining Interest, but detracts much from the character of the Prime Minister, who descended (although, possibly, in ignorance) to a "cave," which tended to deceive the assembly whom he addressed. We have more than once said that we have "all to fear, and nothing to hope," and too surely is the truth of our assertion borne out. This must be manifest to those interested, on a perusal of the late amended Tariff, and it is to be regretted that a Minister—as, we believe, with honest motives, and principles of integrity, having a desire to promote the interests of the nation—should descend to statements calculated to mislead, or that he should possess so little knowledge of the subject on which he calls upon the House to legislate. Before we offer any comment on the speech of Sir ROBERT PEEL, it is right we should furnish the observations made by the hon. Baronet—

[illegible]

In the first place, Sir HENRY FAWCETT combines himself with iron, copper, and lead; now, as we do not import iron, except in bars, iron ore, and pig-iron, or castings, being out of the question—it is hardly necessary to say that the introduction of iron in his preliminary remarks, and the exclusion of any notice of tin and other metals, operates in an somewhat strange manner.

On the subject of land, the hon. Baronet made no remark. I do not desire to notice. Sugar, or sugar and sulphur, although forming two important features in the Tariff, from the increase of consumption and price of the former, and the importance both attached to the latter from the working of sulphur mines in this country, were alike passed by unnoticed. I regret alone engaged the Member's attention, and we have already given what he has

said. It is now for us to consider how far he was right, and, further, how far he was wrong. We will demonstrate this in few words. He tells us we cannot at present "import and smelt foreign copper for internal use." We admit this, and contend that it is the protection, and only protection, to the British miner; for, when it is considered that the dividends divided in the past twelve months, of the companies formed for working foreign mines, was 30*l.* per ton on cake copper (sold at an average price of 90*l.* per ton, which would make the cost 60*l.* per ton), and these profits are compared with the returns from our home mines, it will, we think, be manifest to all who are unbiassed, and have no private interests to promote, that the present advantage of smelting the ores in bond in this country is sufficient, and that the proposed alteration is perfectly uncalled for. We are told that "we have greater advantages than any other country possesses with respect to coal;" and to what purpose does the Miniatur apply these advantages? Why, to enhancing the profits of the foreign miner, to the destruction of our home mines; and here be it remembered, that Sir ROBERT PEEL, in the House of Commons, last night, stated that it was the intention of issuing the QUEEN's letter, calling for a national subscription to relieve the poor, while, by his measures, he is increasing the pauperised population of the country. He should have left it to the SECRETARY OF FOREIGN AFFAIRS to have called upon Spain (!) and other nations to have contributed to those who, by the suicidal act of the Minister, are thrown out of employment—to afford it to foreigners and SLAVES. At present we smelt the foreign ore, for it is to the advantage of the foreign miner to come to this country, and, therefore, the argument of Sir R. PEEL falls to the ground; but, then, we are told that the copper ore so reduced to cake copper is taken abroad, and there rendered into sheet or manufactured copper. Now, we would like to ask Sir R. PEEL, Earl RIFON, or even the shrewd VICE-PRESIDENT OF THE BOARD OF TRADE, whether, supposing the copper was here manufactured as sheet copper, what would be the importance to this country as to the employment of labour? It is so ridiculous and absurd, as compared with the main question at issue, that we cannot allow ourselves to occupy space with the consideration of a subject so puerile in its nature. We are next told that foreign copper is sold on the continent at 10*l.* per ton under that obtained in our home markets or dependencies for British copper—admitted. This is our protection, and for this we contend, it amounts that the nominal protection proposed by Government will cause so large a supply of foreign ores of low produce as to inundate the market, and destroy our home mines.

We will proceed with Sir R. PEEL's speech, and only regret that we could not have infused into the Members for Cornwall, and other mining districts, that spirit which we felt at the moment of hearing the hon. Baronet deliver the "bane" of Government on our home mines—but more of this anon. Sir R. PEEL tells us that a foreign power requires certain steamships to be coppered, and very naturally they wish to go to the cheapest market; and, at the same time, considering, also, that the cheapest is not at all times the best, they do us the favour of paying a visit to Great Britain. An unusual demand is made by the "foreign power" to allow a drawback—which, as a matter of course, was rejected; and we are next told that, rather than enter into a contract with parties abroad, the foreign power has determined on awaiting the result of the Tariff passing. Is not this, in itself, sufficient evidence of the opinion entertained by "foreign powers," as well as by every one possessing common sense, as to the consequences which must result from the measure—a reduction in the price of copper—and, we appeal to the mine adventurer, but more especially to the practical and working miner, can you contend with foreign produce?

Now, then, having taken the main points of Sir ROBERT PEEL'S speech, in which, be it remembered, he excluded all other ores than those of copper, it will be seen that he admitted there was a difference of 10*l.* per ton between the price of British and foreign cake copper—and what does he propose to do? Why, to admit foreign ore of 10 per cent. produce—say, ten tons of ore to the ton of metal—at 30*s.* per ton on the ton of manufactured copper. It, must, then, be clear to the most common understanding, that, if the price be maintained in our home market—and, if not, our home mines are destroyed—that, as the ore would obtain an increased price of 20*s.* per ton, subject only to a duty of 3*s.* 6*d.* per ton, there is a great encouragement to the introduction of the poorer class of ores, and, consequently, a saving, or premium, offered to the foreign miner of 17*s.* 6*d.* per ton of ore under 10 produce. That the Miners are ignorant, and, to use a vulgar, but expressive phrase, “humbugged” by Alderman THOMPSON and the foreign miners, no doubt can exist, while Sir CHARLES LEMON, Mr. PENDRYES, Mr. TURNER, and the rest of the lot of Cornish members, either, from one motive or another, lend themselves to those whose acts are destructive of, and must, in the end, annihilate, the mining interest of the United Kingdom.

We find that Mr. LAPOUCHÈRE very naturally accepted to the proposition of Sir ROBERT PHILIP, and "clenched the nail," for, says the hon. Member—

"As regarded minerals and ores, the proposition of the right time, *mercredi* would be most beneficial to business. Circumstances had occurred to convince him of the injury done to our trade by the high prices of metals; he had known that it was possible to supply the French navy with copper, for instance, 12 per cent. cheaper than the English. The consequence of this, of course, was, that vessels were sent to be coppered abroad instead of in this country."

Having given the substance of the remarks made by the Minister in introducing the Bill, it now behoves us—perhaps, for the last time—to address ourselves with seriousness to those who will be most affected by the proposed measures—we mean the working miner. Yet, perhaps, it is right that we should not dismiss the subject without alluding to the conduct of the Members for Cornwall, and the mining deputation from Cornwall, who have, we honestly believe, “sold” the county. We have Members for the eastern and western divisions of the county, Members for Truro, Helston, Bodmin, &c., and yet not one of them ventured to stand up in the House to support and uphold, as was his duty, the interests of those constituents to whom he was indebted for his return. We take delight in feeling, that, while we advocate the interests of Cornwall, and all other mining districts, we are not Cornish—were we so we should, indeed, feel disgraced and degraded, in having sent a Member to the House who was not bold enough, in a case like the present, to express his opinions as to the consequences which must attend the proposed measure, and the disastrous effects on the borough or county he represents. We are sick of Members of Parliament, no matter whether Whig or Tory, Liberal or Conservative—each regards only his own interest, while that of the community is, in most instances, sacrificed or overlooked. But let us return to the speech of the Prime Minister. He tells us that copper has risen abroad 1d. to 6d. per ton; but he did not at the same time, tell the House that it had dropped at home, or in the European market, 6d. to 1d. per ton—thus establishing the correctness of our prophecy some weeks past, that copper abroad would go up while at home it would go down. No—this would not answer his

As the war is neither beneath the notice of the Minister of Finance, nor is it a matter of course, without having any grave charge preferred against us—so merely the throwing out of employment of a few thousand individuals, and the security of some hundreds of thousands of capital invested, cannot be considered worthy of our notice, when it is disregarded by Her Majesty's Government. See *the Times*, 18th June 1871, p. 11, col. 4th, par. 1st, and its contents.

assumption within the past few years being quadrupled—this, of course, is not necessary for the Minister or as to notice—neither is sulphur, although to the mining industry of this country is the manufacturer indebted for the reduction of price from 14s. to 6d. 10s. We shall, therefore, confine our remarks to those general points (for we are absolutely tired of adducing "facts and figures") which appear to us matter for the consideration of the mine adventurer and the working miner; and we believe, after all, it will depend upon the latter whether this country is to be sacrificed to place and power, or whether the mining interest, which is powerful, should protect itself.

We did expect ere this that a meeting would have been convened in Cornwall to report the result of the interview of the deputation with Ministers; and having, in our last week's Journal, inserted a letter from Mr. TREFFRY—a gentleman to whom the mining interest owes much, and the working miner more—who, intimately connected with the mining interest, is honest in his intentions and exertions, but, as we believe, defeated by his coadjutors, who he considered like himself, but of whom we entertain a somewhat different opinion—even including the hon. Members, the author of “the pamphlet,” and others. No such meeting, however, has been called, and while we acquit Mr. TREFFRY of any want of energy it is to be regretted that the mining interest should be thus sacrificed:—(It is with sincere regret that we learn, by this morning's post, the serious indisposition of this gentleman—an illness, we believe, to have been brought on by fatigue of body and anxiety of mind in the endeavours he has used to protect the mining interest.)

As regards the committee appointed in London for the promotion of the "British Mining Interest," we are happy to say that not one day has been passed by without attention being directed to the subject; and a letter, addressed Ministers by the chairmen (W. R. VIGERS, Esq.) which, we have seen, is highly creditable to that gentleman, as well as to the body he represents.

We now have to direct attention to the only more narrow question before us, whether we are to support or oppose the amendment proposed by our Cornish Member, and we think, with all due deference to the opinion of that gentleman, and respect for him, as believing his "intentions" to be good, that his "acts" are more detrimental than beneficial to the cause of the miner. Mr. TURNER has given notice that he intends to move the following amendment, which we give at length, for just so much value as it is worth :—

Mr. TURNER.—in Committee on Customs Acts (on copper ore), to amend that the words "containing not more than ten parts of copper per ton of metal," be omitted. In case that amendment should not be agreed to or division, to move, that the following words be omitted:—

Copper, ore, %		100		Containing not more than 10 parts of copper, per ton of metal		\$1 10	
50	50			than 15 parts per ditto	50	50	8 00
50	50			than 20 parts per ditto	50	50	4 10
50	50			than 25 parts per ditto	50	50	6 00
50	50			than 30 parts per ditto	50	50	2 10

And in place thereof, to insert—¹⁰ That there be a fixed duty of 71. 10s. every ton of metal extracted from ores to be imported from foreign countries. Also, to move in committee, that the words—¹¹ Tin, ore and regulus of, the ton. be struck out of the clause.

all
rat
to

Diets, in blocks, ingots, bars, or slabs, the full extent of
be omitted, and that the following words be inserted:—
"Tin, ore and regulus of, the ton."
Diets, in blocks, ingots, bars, or slabs, the ext.

We would just ask Mr. TURNER what is the full extent of the benefit for protection is out of the question) that as regards copper contemplates by his amendment? In the first place, he says, if the first amendment be carried, he does not propose the second, which if he fails in the first he will submit the latter. The absurdity of this proposition will, we think, be apparent to any one who, understanding the question, will read the words of the motion. TURNER proposes that instead of the minimum duty being 30s., it shall be 3*l.*—leaving the other parts of the sliding scale fixed by Ministers—that is to say, that under 20 pounds, which is the average of foreign ores, the duty shall be 4*l.* 10*s.*, which is the maximum duty.

We feel assured, without Mr. TURNER is affected by the G. stonian or Thompsonian mania, that he knows, as well as we do, a farce to propose the first amendment, and we regret he should fall into the error of supposing that 34. per ton would exclude ores—that is, under 15—and at the same time lost sight of the under 20, which are to be admitted at 47. 10s. Had he referred the Journal of last week he would have seen that 861 tons were at one "ticketing" from the Cobre Mines under 12 produce, we will not enter into figures, for we feel that we have already afforded too much space to the subject, considering that those interested are so supine and inactive.

If we take the second part of the motion, or the amendment proposed, we find in it something reasonable, were it practicable, or did not the former part of the motion render it nugatory. We are not at all prepared to say that 7*l.* 10*a.* on the metal count in all ores would be a protection, but it would be a gain. Mr. TURNER says, if you will not allow ores under 15 per cent. to come in at 3*l.*, under 20 at 4*l.* 10*s.*, under 25 at 6*l.*, and above produce at 7*l.* 10*s.*, then give me 7*l.* 10*s.* on the metal count in all ores, whether of 5 or 50 produce. Why, the Minister laugh at him—and with the best of intentions, he has, we are to say, manifested an inexcusable ignorance of the subject, unlike the Minister, it is to be regretted that, before he proposed this measure, he did not get counsel from those better informed than himself. The first amendment, as proposed, is no protection at all, but is only a waste of words.

We are informed that on Thursday a deputation, headed by Mr. Ald. THOMPSON, waited upon the Minister, accompanied by Mr. Ald. THOMPSON, waited upon the Minister in favour of the importation of foreign ores, who were graciously received. We should have thought they ought to be well satisfied, and, doubtless, they are, but were, no doubt, apprehensive that the British miner would have taken the proper and natural course of remunerating with the Minister—it is, however, clear that of remunerating with the Minister—it is, however, clear that the British miner is in a state of collapse, the "Doctor" gives over, and the foreign miner will, no doubt, raise a monument to his memory, for, as the Tariff passes, so may he be said to be the "departed." One word more—MINERS ACT FOR THEMSELVES, your assumed friends are but "wolves" in sheep's clothing.

The hearing of counsel to show cause why the rule obtain the production of certain papers connected with the Talacora and Iron Company, detained by Mr. Alderman THOMAS WOOD in his capacity as solicitor of the company—as also to answer the allegations, on which were grounded an application to the court having for its object the striking the worthy Alderman off the list as a solicitor—should not be made absolute, took place on Saturday last. A report of the arguments of counsel will be found in columns of to-day, and which we give as fully as possible, in consideration of Mr. Alderman THOMAS WOOD's threatening proceedings against us for expounding abuses, and developing the same. It was our intention to have given the substance, or an abridgement of the affidavits put in on both sides, but Mr. Alderman THOMAS WOOD having declined to furnish us with copy of affidavits, we, in him, which, in itself, ought to have been an answer to the charges preferred, we deem it unnecessary to recapitulate the statements which have already appeared. A careful perusal of the report referred to, must, however, convince the shareholders, and every impartial reader, that a gross fraud has been practiced, as Mr. THOMAS WOOD has lent himself to the fraud.

Mr. Addison PUGH, who is
It is satisfactory to find that the opinion we expressed
the sincere and repeated last week, have met with the con-
of the learned Judge who presided on the rule being granted, a
that of the Solicitors-General (the advocates for Aid)
who distinctly express their opinion, that, if the allegations

In our paper Mr. S. B. Rogers, "warned to direct read it with care to Mr. Rogers," been furnished this nature specially at us so heavily but working

The hall held yesterday afternoon observed the course observed by the government provided by a committee regarding the presented to this company in the one shall not be company at the firmly do hereby so, to democracy a discreet men of character the measure of liquidators should of liquidation which must be able or are before our hands - we will prosper

We have a series of have later their people a theology of an answerable our opinion we need to construct even tend as far from "under." contemplation and by the data a to give personal information FAGUN, A —imperf without dated to

Mr. Ro
directs pu
sently dis
considerab
tain it,
sion of fi
or p
ated to c
ered, du
sign met
sheet
atures o
ne-four
the gre
nc. Mr
other spe
his adult
and the
aidance
be adult
or time,
one part
only cost
is clear
the mate
the

Two N

ated for the Court, in certain cases, the House of Representatives may, by a two-thirds vote, impeach a federal judge. The House of Representatives may also impeach a federal judge who has been convicted of a crime. The House of Representatives may also impeach a federal judge who has been convicted of a crime.

ORIGINAL CORRESPONDENCE.

DATA FOR BLAST-FURNACE MANAGERS.
TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Inclosed with this I beg to hand you the concluding letter on blast-furnace management. I have endeavoured to condense the whole process—or, at least, all the essential parts thereof—into a few words as may convey my meaning fully and plainly; and of this I am quite sure, that, by obtaining a proper analysis of his materials, and by attending to the principle I have endeavoured to enforce (viz., to assort his mines and fluxes, so that the residuary earths will readily fuse into a clear and colourless glass, or clinker, without protoxide of iron), any furnace manager may regulate his processes, so as, at all times, to obtain whatever result he may desire; this has always been termed an impossibility! so Mr. Crawshaw, of Cyfarthfa, said, with respect to puddling on iron bottoms, now more than twenty years ago, when I offered that important discovery to him; and so said Mr. Shorthouse, of Birmingham, now thirty years ago, when I proposed to make sulphuric acid at 1d. per pound from iron pyrites! The days of impossibilities are, however, fast fading away. * * I trust that the series of papers furnished will have the desired object, in directing the attention of others to the importance of combining polemical science with practical experience. I have contributed my humble efforts in the promotion of the cause, and shall be well satisfied if that the object be alone in part achieved. S. B. ROGERS.

Nantyglo, Monmouthshire, May 9.

[The paper referred to by Mr. Rogers will be found inserted elsewhere, while we have felt it our duty, in another column, especially to direct attention to the series, as one of high value and practical utility.]

MINING IN IRELAND—KNOCKMAHON MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In your letter, dated the 27th ult., inserted in the last Number of the *Mining Journal*, you stated that you succeeded me in the year 1833—that the mine was in the dilapidated state you complained of—and the month's proceeds were not more than sixty tons—also, that the productive ground discovered by your predecessor was nearly exhausted. How is it possible that I, having obtained my discharge ("dismissal") in August, 1831, can be accountable from that time to 1833, fully one year and a half vacancy between us as managers (a time apparently of misadministration that any one may claim if he choose—as regards myself, I will not have it)? The h fore-mentioned charges appear strange for a person stating facts, and who has neither leisure or inclination for controversy. By whose authority do you question me why I did not retain my situation? This can be explained satisfactorily by parties interested, whom I yet believe will do you and me justice. You may rely on it I do not seek any merit due to you, neither would I accept of it, and, had there been a space left for me by Mr. Croker, between Mr. Foley's recommendation of the said mine to the Mining Company of Ireland, in the year 1826, and your's of 1833, that I should term real "fair play."

JOHN DAVEY.

Gwinnar, May 10.

MINING IN IRELAND—KNOCKMAHON MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—It affords me considerable pleasure to find my statement of facts, relative to the discovery of the Knockmahon Mines, has attracted the notice of your readers, and been corroborated by so many respectable witnesses. Allow me, in a few words, to show the evidence adduced:—Capt. Davey: "I claim the discovery."—Mr. Foley: "Capt. John Davey undertook working the mine under favourable opinions."—Fair-Play: "Made considerable returns of ore."—Mr. John Petherick: "I readily admit that a large and exceedingly rich course of ore had been discovered long before Capt. Davey left the company. So that I feel proud, rather than shame, having such substantial witnesses, for having stated that it was through the skill and perseverance of Capt. John Davey the inexhaustible riches (of Knockmahon) were brought to light," and claim the honour of having obtained a verdict to that effect, from, not a packed, but a jury the very reverse, and consider there is no room for any one to complain of the verdict, so as to keep that part of the question in agitation longer. This was all I claimed, and, through the medium of your impartial paper, have obtained it. I wish, however, in conclusion, to state that I consider Mr. John Petherick has too much trdden in the steps of your correspondent, "Fair-Play," in claiming his assertions "to be substantially correct in every particular," and am happy to have it in my power to remove much of the obloquy thrown on Capt. D. by both "Fair-Play" and Mr. John Petherick, from their own communications. Mr. Petherick writes:—"When, in 1833, I succeeded Capt. Davey, the company had sustained a very serious loss on the working during the half-year immediately preceding." Now, Sir, Capt. Davey left in 1831, and Mr. Petherick succeeded some other than Capt. Davey, to whom, at all events, the loss for that six months must be attributable, "as well as for a considerable time previously;" and Mr. Petherick also shows that, though he confirmed "Fair-Play's" statements in every particular, "that Captain Davey had picked out her eyes," &c.; that, under some other "mismanagement," the eyes had been picking out for some eighteen months, and even then sixty tons a-month could be raised in this blind mine. Surely your readers are not blind, and can perceive the attacks of "Fair-Play" and Mr. John Petherick are not straightforward facts. The disgrace merited by the publication of them is a sufficient reward. With respect to the machinery, Capt. Davey says:—"I acknowledged it was imperfect, and greatly retarded our progress." There are various facts might be stated to show this was not owing to Capt. Davey's want of skill, but the limits of this communication prevents my entering into it, but, at a future day, should your correspondents question the truth of my assertions, I will repudiate much of the calumny so copiously bestowed on Capt. D., by facts so clear as those contained in this communication. S. A.

Candover, May 9.

MINING IN IRELAND—KNOCKMAHON MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—As one interested in the prosperity of the works of the Mining Company of Ireland, I shall offer one or two remarks on the "controversy" which has lately appeared in the *Mining Journal*, as regards Knockmahon Mines and "our captains." As far as ever I was able to learn, Mr. Davey, while employed by our company, enjoyed the confidence of our directors in as full and ample a manner as Mr. Petherick; and, from the fulsome egotism of both gentlemen, as displayed in their letters, I should say such confidence ought not to be too freely bestowed on either. The principal agent, or managing director, of our works, I always understood to be Mr. Parry—indeed, several of our agents, I should say, may put forth an equal claim as to being principals with Mr. Petherick, in their own department. As regards Knockmahon Mines, it might be of importance to inquire to what extent Mr. Petherick has been satisfied in the management of these mines by able and efficient "conductors." An officer, who fully understands his business, will ever be more ready to give full credit to his staff, for whatever attends their joint efforts, than to make loud complaints of being "unjustly deprived" of his own share of credit in the expedition, or, as Mr. P. has done, to claim the whole credit of "having succeeded under the most difficult and discouraging circumstances." But where, after all, is the great merit due to any of the parties? According to Mr. Petherick's own account, and that of his friend, "Fair-Play," the mine was reduced to the ruinous state described by mismanagement alone; consequently, whoever succeeded to the management, it was easy for them to show an improvement. I think Mr. P. and his friend have attempted to prove a little too much, unless they can go a little further, and claim the merit of "dismissal" of the ignorant manager; and, if one exchange was good, so may another, and I would beg to give a hint to the responsible parties to look to this; principals, as well as subordinates, ought always to be well looked after when once they begin to praise themselves.

A SHAREHOLDER IN THE MINING COMPANY OF IRELAND.

Lillistown, May 19.

VENTILATION OF MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Your correspondent from Trugilow Mine says, in his communication of the 25th ult.:—"We have boiled the mine from the forty to the thirty fathoms level, whereby we have derived considerable benefit from ventilation." Another writes from the mines of the Cornwall Mining Company:—"We have communicated a winnow from this (sixty fathoms) level to the fifty, which will greatly ventilate the sixty fathoms." Now, Mr. Editor, it is not impossible to reflect that, according to the present practice of miners, the men are half suffocated, and diseases thereby engendered, or the men profliged to various disorders, because a hole

or a winnow, long delayed by foul air, has not been completed? What would be thought of a man who endeavoured to improve the health of his fish by holding them in the air till half dead before he threw them into his pond? But a trout, it seems, is worth more than a man; it has been fully proved by the gas companies, if any entertain doubts on the subject, that air may be conveyed through pipes to any extent, above, below, east, west, north, or south. Surely, wherever a man can go, an air-pipe may be carried. Why might not a cylinder like a gasometer be used (with clacks arranged as I shall hereafter describe)? The resistance would, of course, be much less than that of a gasometer, as there would be scarcely any resistance at all in the transmission of air through the pipes with ends open; 5000l. in the course of a year, would not be thrown away in ventilating even a poor mine, for more work would be done, with less injury to the men, whilst the current expenses would be comparatively less. A man who works in bad air is a fool, and a self-murderer. * * *

Penzance, May 2. A. T. J. MARTIN.

TALACRE COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—The remarks published in your *Journal* of last week, and the comments you have promised in your next publication on the proceedings of Saturday last, in the Court of Queen's Bench, will, I trust, arouse the attention of the shareholders of this company to the critical position in which they stand, for, which ever way that case is decided, it is to them a matter of importance, one that will not admit of delay—one that will not admit of doubt or vacillation—but will require measures of a definite and energetic character; it is obvious that the step to be taken must be that alluded to in your last *Journal*—viz., to indict the whole of those who were originally connected with these vile transactions, and make them answer for their conduct at the bar of the Old Bailey.

When the learned counsel applied for the rule against Wood, it was stated decidedly that it was applied for in furtherance of ulterior measures, and it was observed by the learned Judge, that supposing the facts stated to be proved, public justice would not be satisfied were proceedings to stop short of a criminal prosecution. I understand that the intention then stated and determined upon has not been abandoned, and that evidence sufficient to leave little doubt of the issue has been collected, and I would earnestly request your assistance in calling upon the shareholders, if they have any claim to manliness and self-respect, not to let the burden of this fall upon those who have already suffered so much by throwing themselves into the breach in their behalf; it is not a matter of generosity, nor simply of feeling, but one of policy to themselves, for if the verdict is against the defendant, it is a duty they owe to society to see that he pays the penalty of his misconduct; and, if the decision should be in his favour, the company then will be in the situation of "Sinbad and the old man of the sea"—it will be a struggle for mastery, either he must be overcome, or, like those unfortunates who fell into the hands of that respectable gentleman, they will be strangled; the evil will come to their own doors, and they will not be permitted to escape, for there is never any compromise between honesty and dishonesty, when the power is in the hands of the latter. The question, then, of ruin or combined resistance, will shortly be for them to determine upon, and no effort of theirs can be effective unless acted upon with promptitude, and carried forward with becoming spirit. It has occurred to me, Mr. Editor, whether it would not be worthy the consideration, and beneficial to the interest of legitimate mining associations, to assist in prosecuting those who have been guilty of gross and undeniable frauds upon the public; and whether the formation of a society for that purpose would not materially tend to produce a greater degree of confidence in the minds of proprietors, and to excite a spirit of prudent enterprise in those undertakings, that would be, in a high degree, useful to the community; it is not to be supposed for a moment that mining interests do not suffer by the prevalence of companies got up by persons without character or capital, just as the exposure of the West Middlesex Assurance Company tended to alarm the proprietors, and even to shake the stability of every association which appeared to be based on the same principles, and established for the purpose of insurance, however honourable their object, and however safe the investment of capital might really be in their hands. Upon the unfortunate position of Mr. Chappelow, as noticed by you, I may observe that the integrity and unswerving determination which have marked his conduct under trying circumstances, call for our approbation, as his misfortunes awaken our sympathy for himself and family, while the chicane and duplicity to which he has been subject will receive the disapprobation and contempt of every honest man. AUGUS.

Great Russell-street, Bloomsbury, May 12.

ON THE GENERATION AND COMBUSTION OF SMOKE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Mr. Williams's letter in your *Journal* of the 16th ult. brings to my mind the story of the Irish drummer, who, being employed in administering the usual discipline to a refractory subject, was, at every stroke of the "cat," interrupted by his crying out, "Strike higher!" "Strike lower!" The administrator, after following for some time these directions, without being able to satisfy the recipient, at last exclaimed, "Spare, now, there's no satisfying you—ain't I doing all I can to please you?" "Pleased," however, he was determined not to be; and my friend Mr. Williams seems pretty much in the same humour. His objects to my algebraic formula, which he says has nothing to do with the question at issue; he objects to the "abundance of undisputed chemical facts and references," which he considers unnecessary; and he condemns, as totally inadmissible, the references to the practical results which are daily and hourly given, because "this is begging the question at issue, and assuming the disputed fact." And yet, although I am neither to "strike high," nor to "strike low," he calls upon me to prove the point in dispute! Let me, however, examine Mr. Williams's letter a little in detail. He commences by accusing me of want of candour or want of careful reading and inferential deduction. He has forgotten, perhaps, the maxim, *quisque ex seipso debet opinari pro seipso*, for, although I deny any want of candour in any of my letters, I might refer him to his own statements respecting the errors which he has so often stated to exist in my essay *On the Chemical Constitution of Coal* for a sufficient justification, if I were disposed to follow his example in this matter. But I rather think that what Mr. Williams calls careless reading, in reality arises from his stating the same subject very differently at different times. Let us take, as an example, the subject of the length of the flame in a furnace. In his letter he denies that he has ridiculed Trugilow's statement about the flame of a furnace having a length of six feet; and he now states that the flame in his own furnace is twenty feet long. In another place he has stated that "perfect combustion" would give no length of flame whatever, because it must be explosive after once the combustibles and the supporter are mixed at the required temperature. But as Mr. Williams holds out that his furnace does produce perfect combustion, and does also mix the gases and the air together at the temperature which he considers best for combustion, it follows either that he can have no flame, or else that he does not get perfect combustion, according to his own definition; and here we see that, without his readers being either careless or unscientific, Mr. Williams can easily bring forward evidence to show he has been misquoted, by taking either side of the question and omitting the other.

Mr. Williams, however, appears by no means desirous of putting his reasoning powers to the test, for he avoids throughout the question which he professes his desire to decide—viz., whether smoke is or is not combustible? And he denies his right to prove the negative, and calls upon me to prove the affirmative, while, as already stated, he forbids the use of the only means by which proof can be afforded. But while Mr. Williams condemns others for their careless reading, he himself affords abundant singular instances of it in his own letter. I have, in the letter of the 25th of January (to which his last is a reply), stated what smoke consists of; and its combustion is, of course, nothing more than a change produced upon it by its combination partly among its own constituents, and partly with the atmospheric oxygen. No one, of course, can suppose that any portion of the smoke can be destroyed, or, in other words, that matter can be annihilated. I have stated that smoke consists of hydrogen, oxygen, acetic, and carbonic, and the compounds formed from these bodies; and it also contains, in minute quantities, various sulphates, alkaline earths, and many other substances usually found in sand. When the smoke is consumed in a properly constructed furnace the particles of uncombined carbon, which exist so abundantly in the black smoke of common furnaces, is converted into carbonic acid gas, and the other constituents form further quantities of the same gas, acetic acid, steam, carbonic oxide, sulphuric acid, and a few other constituents, and all escape in an invisible form with a very large quantity of acetic derived from the steam-

sphere. These changes are produced whenever there is sufficient heat and sufficient oxygen; and an excess of the latter does not produce smoke, as Mr. Williams seems to imagine, unless the heat be insufficient to raise the temperature of the whole gaseous matter to the extent required for combustion. The production of smoke is, therefore, far more likely to be caused by admitting cold air into the furnace than hot air, as in the latter case smoke can scarcely occur, although it will certainly not be economical to admit more air than is absolutely required for perfect combustion. I do not understand how Mr. Williams can deny the possibility of consuming smoke after it is once formed, for it certainly appears to me that by his plan of furnace the smoke must necessarily be formed at the exterior part, and afterwards consumed by admitting a further portion of air behind the bridge. The only furnace which really "prevents the formation of smoke" is that patented by Mr. Samuel Hall, by which hot air is brought to the front of the furnace, and mixes with the products of the coal the very instant they are formed or eliminated. Mr. Williams's furnace appears to me the least likely of any to accomplish this object (the prevention of smoke), unless he heats the air previous to its admission. The most perfect plan, however, to get rid of the nuisance of smoke, appears to be those where the two methods of gradually cooling the coal, and also supplying it with heated air, are united. In many of the inventions for consuming smoke these two methods have been unitedly employed. The most recent is Godson's patent, in which the fuel is coked by slowly and gradually bringing fresh coals into the body of the furnace from a box below the furnace-burn, and the air is heated by the same apparatus. Chamber's apparatus also both cokes the coal and heats the air; and several others have done the same—the earliest, I believe, having been invented by Robertson, of Glasgow, about the year 1801. There is, however, no mystery about the combustion of smoke. The accomplishment of this, by means of admitting air to the fuel through a hollow or split bridge, was the subject of three distinct patents, by as many different persons, about the years 1820 or 1821, which are all exactly similar, and are described in the first volume of Gill's *Technical Repository*. Mr. Parkes also, I believe, had a patent for a split bridge many years since; and in the sixth volume of the above-named periodical (for 1824) there is a description of a method invented by a blacksmith at Dudley for consuming smoke, which he accomplished by merely leaving two holes in the opposite sides of the furnace, each hole being the size of one brick, and which was found effectually to accomplish the object. It is not my intention, however, to describe all the inventions for this purpose; there are innumerable ways in which these principles can be carried out, and the only thing is to select those attended with least trouble, and which are not injurious in other respects.

I should have replied earlier to Mr. Williams's letter, but I was not aware of its publication until a few days ago. I cannot, however, conceive that he can have any very powerful arguments to bring forward on the subject, as I never yet found any one among those who are so very solicitous to throw upon their opponents the *onus probandi*, who had any very conclusive arguments to their own mind, but in general they rather hope, from their opponent's arguments, to gather something to strengthen their own case, by finding a flaw in that of their adversary.

Karl-street, May 5.

CHARLES HOOD.

BEST SIZE AND FORM OF BOILER FOR A WATT'S BLAST ENGINE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—A short time ago I wrote to you to make an inquiry, through the medium of your Journal, from your numerous correspondents, what would be the best form and size of a boiler for a steam-engine of Watt's construction, with a steam cylinder of from 40 to 45 inches diameter, and to blow with a pressure of from 2 to 2½ tons—say, 2½ tons—combining quickness of production of steam, economy of fuel, and repairs? I am sorry to observe that none of them have in any way noticed the inquiry. I feel the more surprised at this, as I am confident you have many scientific and practical men among your numerous readers—at least, I much wish to know which is most effective and economical, those made upon the Cornish principle of "slow combustion," or those of "rapid combustion?" I find here many advocates for the old dome-formed boiler, with raised bottoms, varying from ten to twenty feet diameter, such as have been in use for the last century, whilst a great variety of shapes have been brought forward within the last twenty years—a period, one would have supposed, long enough to have produced some one combining the requisites I name. Cornwall being a large mining county, having a great number of engines, and having no coal of its own, but what must be procured at an increased expense, by freight and carriage, its engineers (of which there are many respectable ones, as Mr. Rye, Mr. Sims, Messrs. Harvey and Co., and others) must necessarily have turned their attention to its economy. And in Lancashire there must, of course, be many respectable men, who have turned their thoughts to the production of steam and saving of fuel. Surely, some one will be kind enough to give their opinion—at least, the result of their practice. Mr. C. W. Williams appears to have been actively employed in developing the combustion of coal from his practice, which appears to have been commenced in the year 1823—now almost twenty years—some strong facts as to form and principle must have met his apparently scrutinizing eye, that would tend to establish a "fit and proper" form for the purpose desired. A. B. *Shrewsbury, May 9.*

P.S.—Since writing the above, I have read a notice in the *Mechanics' Magazine*, of March 19, of an engine being erected at Mr. Cubitt's factory, Thames Bank, performing the work of sixty horses, and consuming only 2½ lbs. per horse power per hour. What can be the form of that boiler?

RAILWAY ACCIDENTS—THE BEST MEANS OF PREVENTION.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Of the accident which has occurred on the railway between Paris and Versailles, and which no epithets can adequately characterize, I shall make the most, for the benefit of the living. The breaking of an axle is said to have been the cause of the accident. I have somewhere said—I think in the *Mining Journal*—that, with the use of iron wheels upon iron rails, no man who gets into a railway carriage can say that in a few moments he shall not be a corpse. I also said, that it would be well if the winter passed over without the death of some fifty persons being traceable to the breaking of an axle of an iron wheel. The winter has passed over, it is true, though the summer has not commenced without the record of such a catastrophe. Although the occurrence was in France, I hope it will lead to the inquiry I have so long urged in England. Surely, after this awful visitation on our neighbours, it will not be deemed necessary with us calculating Englishmen to rest, or put off, the inquiry, until some such event may occur. After the loss of life on the Versailles Railway, and the injurious attendant thereon, I hope we shall have no more ranting about the safety of railway travelling, as compared with stage-coach travelling. If the accident in question had happened in one of our tunnels (Kilger or Box, for example), it is more than probable that, out of 1000 passengers, a thousand would never again have seen the light of day; and if on one of our high embankments, the disaster might have been still more calamitous. Better and cheaper would it be to have bridges or viaducts across valleys as high as St. Paul's, than the buried tunnels and high-level supererected embankments, through and over which thousands of persons are daily compelled to pass, at the imminent risk of their lives. In proportion as the means of transport become a monopoly in the society of the public, distinguished, for the work to be done gets into the hands of a few influential individuals, who care not a straw for the welfare of human life, if its prevention would mean their gains. Not long since I urged on a great locomotive the importance of being wondrous wheels, as a means of security, when he equably replied, that he would support the use of wood for any shape to the extent of his power! Nothing, I will know, can ultimately prevent the use of wood rails and wood wheels, but I wish the use to be the means of preventing a further sacrifice of human life, and not the consequence of it. The cause of danger in steam navigation and railway travelling (the safety of which an immense loss of life may come to an end) are not analogous. In the former they are caused, such as collisions, and other dangers from a thick fog coming on suddenly and unexpectedly, against which known provisions could not guard; but, in the latter, they are, for the most part, preventable, and may be guarded against, so that no serious accidents should occur. Then, every iron wheel, and every axle, at this moment in use, is liable to break, and involve thousands of persons in death and suffering.

I have now to state what is, perhaps, but little known, and which must create some in the mind of every reflecting man. Railway rails, although made of the very best materials, and with the strictest care and attention

that can be bestowed upon the making of them, daily and hourly undergo deterioration in quality, in consequence of continued vibration on iron rails at a high speed, the axle, in point of fact, undergoing the process of continual hammering, and the worse the road so much the greater will this deterioration, in a given time, necessarily be. This constant vibration—or hammering, if you please—changes, in some sort, the nature of the iron, whereby the same axle, which at first was good, at length becomes bad. If this is denied, I will give my authority. With wood rails, or proper wheels upon iron rails, this deterioration could not take place. All I want is inquiry into the allegations I have from time to time made, and, surely, we have now quite enough before us to justify such inquiry. Permit me to call on you, Sir, as a public man, to aid in this beneficent design. It is rather singular, that, on Saturday last, I wrote a letter, and sent documents, to "Les Ministres des Travaux Publics" at Paris, upon this very subject. He might have got my letter the day the accident happened. I have also forwarded a copy of this to the same Minister. *Moorgate street, May 11.* THOMAS PARKIN, C.E.

WATER-WHEELS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I beg to say that, in my calculations of the 20th ult., published in your Journal, No. 348, the wheel friction was omitted. The buckets in the fore part of the upper radius are computed as being all full, when allowance should be made for three or four of the uppermost, which are at all times about empty. The tables in the *Practical Miner's Guide*, particulars of which you published in No. 342, 12th March last, are fair calculations, wherein the length of the crank appears to be allowed for the friction of the axle, &c., &c.; and, no doubt, the author proved it by practical results, previous to its publication.

Example.—Suppose diameter of a wheel to be 48 feet, then the arms from the centre to the rim are 24 feet; deduct the length of the crank, less 3—21 feet, being one-eighth part deduction for wheel friction, or, as $46 \div 2 = 23 - 3 = 20 \div 3 = 6\frac{2}{3}$, instead of 7½.

In Adcock's *Engineer's Pocket Book* is a table showing the power, &c., for breast-wheels—viz., 8½ cubic feet per second, acting on the float boards of a wheel 13 ft. 6 in. diameter, will create a force equal to 512 lbs., and perform 9½ revolutions per minute. 512 lbs. \times 9½ revolutions, amounts to 4915 real power per minute; performed with 8½ feet per second, at 624 lbs. per foot, is 30,937 per minute—nearly as 1 is to 6.

There is no inventor without his prejudiced opponents, be his inventions ever so valuable; but no engineer of the present day can be expected to countenance now-fangled opinions (arising from bigotry), when totally destitute of theoretical reasoning. "Your (Bickleigh) correspondent's letters are very extraordinary ones." Sir distinct opinions have now appeared in your columns, diametrically opposed to "A Miner's" assertions, neither of which comes so high as I is to 3. You cannot find, Mr. Editor, an author to support his assertions. I may use the words of another of your correspondents—viz., "that I conceive he is endeavouring to establish an error." He knows what a radius means, but is not so much experienced in mathematics as to know the use of it, for, in his wheel calculations, he uses the diameter instead of the radius.

In No. 340 is a letter from Mr. "N. V.," requiring the height of a column for a pressure engine, to be equally effective with a 50-feet wheel, each having 1000 cubic feet of water per minute; in reply to which, I beg to say, that, if the stream can be raised 100 feet high, acting as a pressure, it would perform work equal to 70 per cent., when a water-wheel of the best construction—say, Bickleigh wheel—carrying the whole of the water three-quarters down from the top, cannot possibly be made to perform work equal to 35 per cent. W. WHELAN.

Valle of Chelyd, May 9.

THE NEW TARIFF—THE MINING INTEREST.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I am much at a loss to understand that our mining interest is likely to be prejudiced by the low-priced ores from Cuba being mixed with the higher—which has been so much talked of—and thus introduced at the minimum duty of 2½ per cent. Suppose, then, we take two parcels, of 100 tons each, by way of illustration—

Prod.	Stand.	Retn. obs.	Per ton.	Tons.	Amount.	Duty.	Amount.
75	100	118	2 5	100	250	2 5	250
75	100	118	2 5	100	250	2 5	250

Now, if these two lots be mixed, we get—
150 ... 150 ... 225 ... 225 ... 225 ... 225 ... 225 ... 225

Here there certainly appears to be in favour of the miners the sum of 564 17s.; but, Sir, I have been informed, and I believe, well informed, that the expense to the Cuba miner on each ton of ore is about 10s., and that all which accrues above that amount is profit, so that on his 100 tons, of 20 produce, at 15s. 15s. per ton, there would arise a profit of 84 15s. 4s. or 87s. 4s.; whereas, on the 200 tons, of 13½ produce, at 12s. 3s. per ton, there would only be 24 3s. per ton, or 430s.

Am I wrong in my calculations or my judgment—or both—when I suppose the Cuba miners are not likely, at considerable trouble and expense to themselves also, to mix ore under such circumstances, by which they will reduce their profit on the first parcel from 87s. 4s. to 430s., in order to save the sum of 564 17s., the difference in the duty? A MINER.

Fossil-road, Bristol, May 7.

GEOLOGY.—A NEW SYSTEM OF PHILOSOPHY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—It appears from your last paper, that some person, under the name of "Feet" (a nephew or cousin of Nature, perhaps), has come to the rescue of Mr. Montague, "the child of Nature," and he commences by saying, that Mr. M. has not thought it worth his while to answer my puny attacks. It is certainly true, very true, that he has not answered them, but he has thought it worth his while to think my first letter, by misrepresenting what was stated in it, and so to reply to his own distortion of it, and he has also condescended to postpone, for a few weeks, his reply to my second. My attacks may possibly be puny, but, if so, why does not Mr. Montague dispose of them satisfactorily? If he cannot answer my attacks how will he meet great ones?

"Feet" says—"If 'Feet' will take the trouble to refer back to Mr. M.'s preceding articles, he will find nothing said of geologists being mortified and disconcerted in not finding the granitic floor in the boring of Grenelle." In reply to this, I give an extract from the 10th paper—"On a New System of Philosophy." *Mining Journal*, No. 343—"The late experiments of M. Agassiz (Cy. Arago), in digging for hot water in the Paris basin, as it is termed, are anything but gratifying to those theories, or to the observing public; originating in a false conception of the phenomena of Nature, they have ended, as all such experiments must end, in mortification and disappointment to those who were in sanguine of success; they found no granitic floor, no hot water, and the increasing heat in descent was such only as to show the utter inability, not to say absurdity, of theoretic calculation on local phenomena." Having thus proved Mr. "Feet's" main assertion to be untrue, I go on to his next.

"Feet" proceeds—"Speaking from my own knowledge, the generally accepted opinion of these three worshippers was, that at or near the depth served at (in the Grenelle boring), they would find the water at the boiling point." I challenge "Feet" to show the "how," the "when," and the "where," the French geologists, or any other geologists, stated what he calls, in his own language, "the generally accepted opinion" that water would be found at the boiling point at a depth of 600 yards from the surface of the earth; and, so I know he cannot bring forward any such grounds, I may say of this assertion, also, that "it is untrue, and there is an end of it."

I might proceed with the rest of "Feet's" letter, and dispute of it in like manner, but, as it really is known to fight with straw, I leave his other palpable absurdities to their own fate. Now for a few lines to Mr. Montague. In his note to my letter of the 14th ult., he says that his forthcoming article—"On Volcanic Action," &c., will, perhaps, be the best reply to my observations. So far good, I am content to wait. But I may tell Mr. M. for his government, that to make his answer good for anything, it must satisfactorily dispose of the following questions—1. Why should the bottom of the ocean be, as he asserts, at a white heat, in consequence of a central fire, and, at the same time, the bottom of a lake, or lake, or ocean, or even, though placed (with water in it) over an intense fire? 2. Why should it follow (as asserted by Mr. M. in his note to my first letter) that "the volcanic heat must be most manifest in the upper crust of the earth," because I have shown that the upper stratum of water in the ocean or a lake is warmer than the lower stratum? 3. What

authority had Mr. Montague to make the assertion (which I have quoted above in answer to "Feet"), that geologists were mortified by not reaching the granitic floor at Grenelle? Can he give extracts from the writings of M. Arago, M. Elie de Beaumont, M. Dufrenoy, M. Malot, or any other geologist engaged in that undertaking, stating that they wished or expected to reach the granitic formation? To the last of these questions I request Mr. Montague's particular attention, as his neglect to give a sufficient reply to it must cause some inference as to his being drawn by those of your readers who have perused his correspondence—"If Mr. Montague, for the sake of supporting a favourite theory, venture to misrepresent facts occurring so near to us as Paris; what reliance can be placed on his statements respecting 'the Deserts.'" FERRUM.

Bridgend, May 9.

NEW TARIFF—MINING INTEREST.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Having heard, indirectly, that the assertion made by you, of one of the mining deputations from Cornwall having lately been on a visit to the Minister (Sir R. Peel), was not in accordance with the fact, I beg to say that the authority on which such representation was made to me (should it be necessary), you are at liberty to publish, and of which you are already in possession. H. E.

London, May 11.

[We are obliged to our correspondent; the information came from a quarter which we should have considered indisputable, but we do not think it necessary to give publicity to the names of parties—to any of the deputations, or others interested, we shall readily afford the information.]

INSTITUTION OF CIVIL ENGINEERS.

MAY 10.—A paper was read descriptive of "Messrs. Marshall's New Flax Mill at Leeds," by Mr. Combe. This mill consists of one room, 132 yards long by seventy-two yards wide, covering nearly two acres of ground. The average height is twenty-one feet. The roof is formed of brick, gabled arches of thirty-feet span, supported by cast-iron pillars; an impermeable coating of coal-tar and lime is laid over the arches; upon that is a layer of soil, eight inches thick, sown with grass. This immense room is lighted and ventilated by a series of skylights, thirteen and a half feet diameter, one at the centre of each gable; throughout, beneath the building, extends a cellar, containing the shafts for communicating the motion from a pair of 100-horse power steam-engines to the various machines in the mill. The floor and steam cases for warming and ventilating, and the revolving-fan for urging the air into the room, are also placed there, with the gas and water pipes, and the rest of the space is used as a warehouse. All the details of the construction of this extensive building were given, with the cost of it, which appeared to be no more than that of an ordinary fire-proof mill; the advantages of this description of building were stated to be—the convenience of supervision, the easy access to the machines, the power of sustaining a uniformity of temperature and moisture, the absence of currents of air, and several points of minor importance.—In the discussion which ensued, all these advantages were fully confirmed by several members, but particularly by Mr. Smith, of Donston, who originated this mode of construction for a weaving shed of the extent of half an acre. Mr. Marshall saw this shed, and, although the plans for mills of several stories high were made out, he abandoned them, and adopted the present plan, which had been completely successful.—The adoption of similar constructions for machine manufactories, and even for agricultural buildings, was strongly urged, on the ground of the advantages arising from concentrating all the processes under the supervision of one person, and the economy in moving heavy masses. Arched roofs were stated not to be more expensive than wood and slate coverings, and to be quite as sound, when well executed; and of their greater durability there could not exist a doubt.

"The Description of the Explosion of a Steam-Boiler at the Penryn Works, South Wales," by Mr. Stephens, was an interesting account of a sad accident.—The boiler was forty-one feet long, seven feet diameter, with a centre tube due of 4 ft. 2 in. diameter; the thickness of the plates throughout was half an inch; the ends were flat, with rings of angle iron; the pressure of the steam, to which the safety-valves were weighed, was 50 lbs. per square inch. From appearances after the explosion, the tube, which was collapsed in a very remarkable manner in its entire length, had been softened by the heat having been left dry along the upper side, and the sudden injection of water from the force-pumps had caused a development of a large body of steam, which had crushed the steam from one side. No opinions were given in the paper on the theory of the causes of explosions, the author having restricted himself to the absolute detail of facts, and recommending the adoption of the steam whistle, to warn the engineers of the lowness of the water in the boiler, which is the general cause of accidents.

Mr. Lindsay Carnegie presented to the institution, and explained the construction and action of his patent stone-piercing machine, to be used instead of the ordinary jumper tool for boring tunnel holes in railway blocks, stones for marine constructions, &c. The machine appeared extremely compact and simple; its merits, and the economy derived from its use, were borne testimony to by Mr. Vignoles, Mr. Smith of Donston, and Mr. Braithwaite—the latter gentleman having peculiar opportunity of giving an opinion, as he had used for some years Mr. Carnegie's stone planing machine which is employed for preparing the slate billiard tables and other works. The prices for piercing holes appeared very low. The labour on a railway block, with two holes 1½ inch diameter, bored 6 inches deep, and a space 9 inches diameter planed to receive the chair, had been undertaken at Arbroath Quarries for 24s. per block, and the contractor had cleared much money by them.

AMERICAN LOCOMOTIVES.

Some time since we published the particulars of the extraordinary train propelled by the *Hickson and Harrison* locomotive on the Philadelphia and Reading Railroad, and we have now to report a still more wonderful performance, by a "new geared truck locomotive-engine," on the same line; the train impelled weighed 1065 tons, of 2240 lbs., more than that hauled by the former engine. The engine, which was built by Messrs. Baldwin and Vail, has six wheels and outside connections. The large drivers (forty-four inches in diameter), are behind the fire box, and connected with the four truck wheels (thirty-three inches in diameter), by cog gearing, in such a way as to obtain the adhesion of the whole weight of the engine, with little additional friction, and at the same time allow the requisite play in curves. Its weight, in running order, is 30,000 lbs.; on her large drivers 11,775 lbs.; on the truck wheels 18,225 lbs.; or 4565 lbs. on each, and her cylinders are thirteen inches diameter and sixteen inches stroke. The engine hauled, on the above date, a train of 117 loaded cars, weighing in all 1065 tons, from Reading to the inclined plane, on the Columbia Railroad, 6½ miles, in five hours and twenty-two minutes, being at the rate of one ten miles per hour the whole way. She consumed 35 10ths chords of wood, and evaporated 3110 gallons of water, with the above train. Weight of freight, 375 tons, of 2240 lbs.; consisting of 200 tons of coal, twenty-two tons of iron and nails, and ninety-four tons of sundry other merchandise, including fifty three iron bays, ten bbls. of whiskey, ten bbls. flour, ship stuff, butter, &c. weight of cars, 215 tons—making a total weight, not including engine or tender, of 300 tons, of 2240 lbs. While length of train, 1402 feet, or eighty-two feet over a quarter of a mile. The above train was transported in the ordinary freight business of the road, and was run without any previous preparation of the rails, cars, or fuel for the performance. The engine was closely watched at all the starts of the train, and not the least slipping of any of the wheels could be perceived. She worked remarkably well throughout the 6½ miles, and was in the best of order, with her machinery, and no perceptible increase of friction in her gearing. Her speed with the train on a level was found to be one mile per hour. While length of level, over which the above train was hauled, twenty-eight miles, longest continuous level, 5 1/10 miles; total fall, from the point where the train was started to where it stopped, 215 feet. The above train is unprecedented in length and weight in Europe or America.

ELECTRICITY AND MAGNETISM.—M. DREVES has communicated to the Academy of Sciences at Brussels his researches relative to the electricity of induction, tending to prove the one identity of magnetism and electricity. In electro-magnetism iron, he says, are manifested two phenomena opposite in effect—viz., the production of an electric current and the development of magnetic polarity, and these may alternately predominate. The real and palpable electrical currents that are produced in magnetized iron may act simultaneously on the observed magnetism, and not only completely neutralize its action, but even render dominant their own counter-action. Under these circumstances, he considers it impossible that the forces, opposite in action, now the one predominant, and now the other in the same body, can be one and the same, and argues that acknowledgedly there are two distinct natural forces—magnetism and electricity. With these views M. Dreves proceeded to argue, that, admitting that a current of electricity produces two forces acting in a contrary sense in the placed near it, that is to say, a magnetic polarity and an electric current, which may alternately prevail the one over the other, the point will be that the electric current will become magnetic residues in this, that when the electric current ceases the magnetic polarity; the decomposition of this current, by removing a wire into a packet or bundle of insulated wires, then, to make apparent the magnetic polarity. M. Dreves has demonstrated first in brass, and then in aluminium, zinc, lead, tin, iron, and copper; and they behave themselves as iron and nickel.

15

